OH-1

USERS MANUAL

MITAKA KOHKI CO., LTD.

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Thank you very much for your purchase of the OH stand

This stand enables the microscope's various spacial motions, XYZ transference, tilt right and left and back and forth, by six axis.

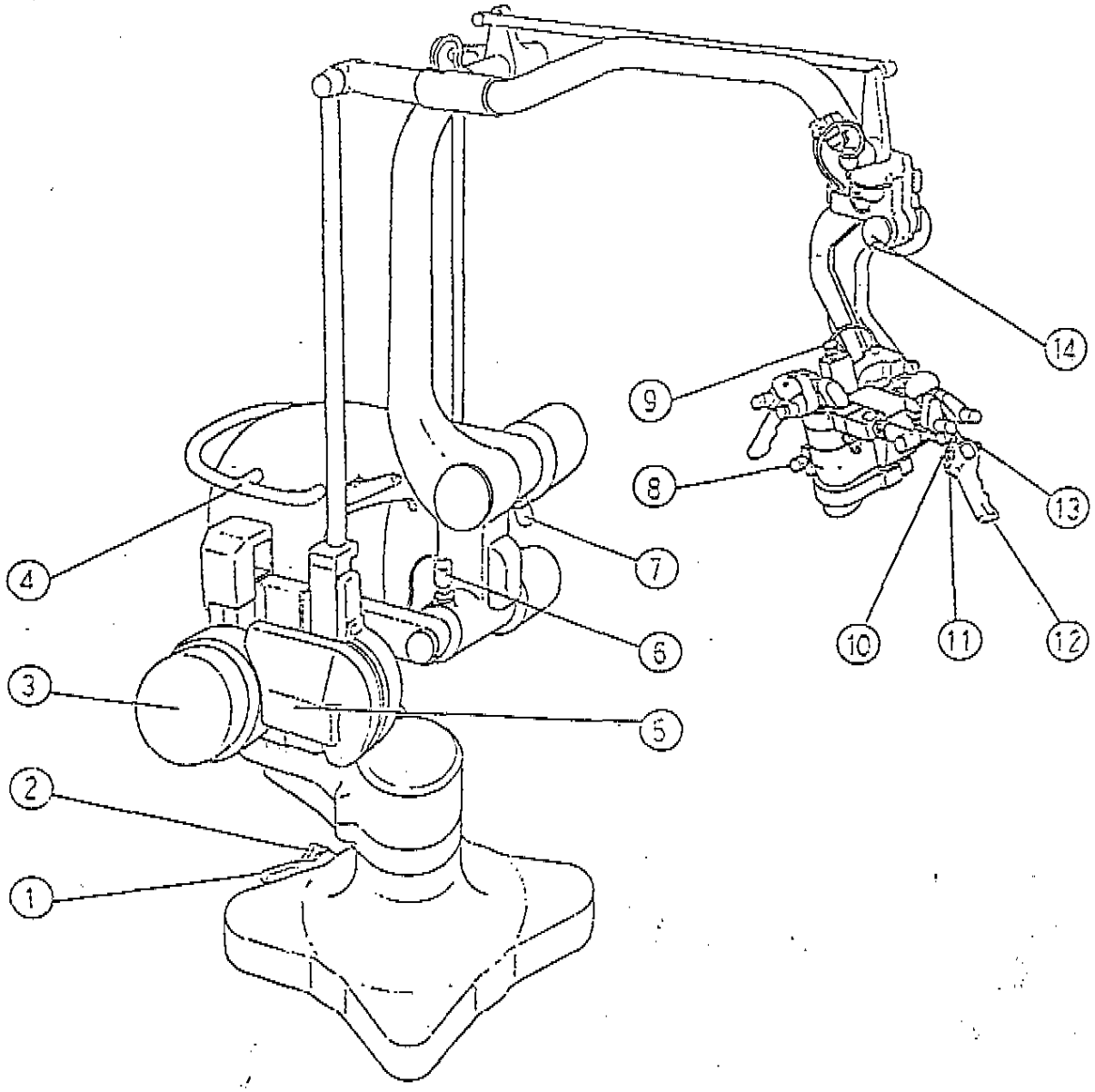
Each axis has an electromagnetic brake which can be easily released with the buttons on the hand grip.

Adjustment of the level is not needed.

The stand can be used in any direction around the base because the "Over Head Position" is available.

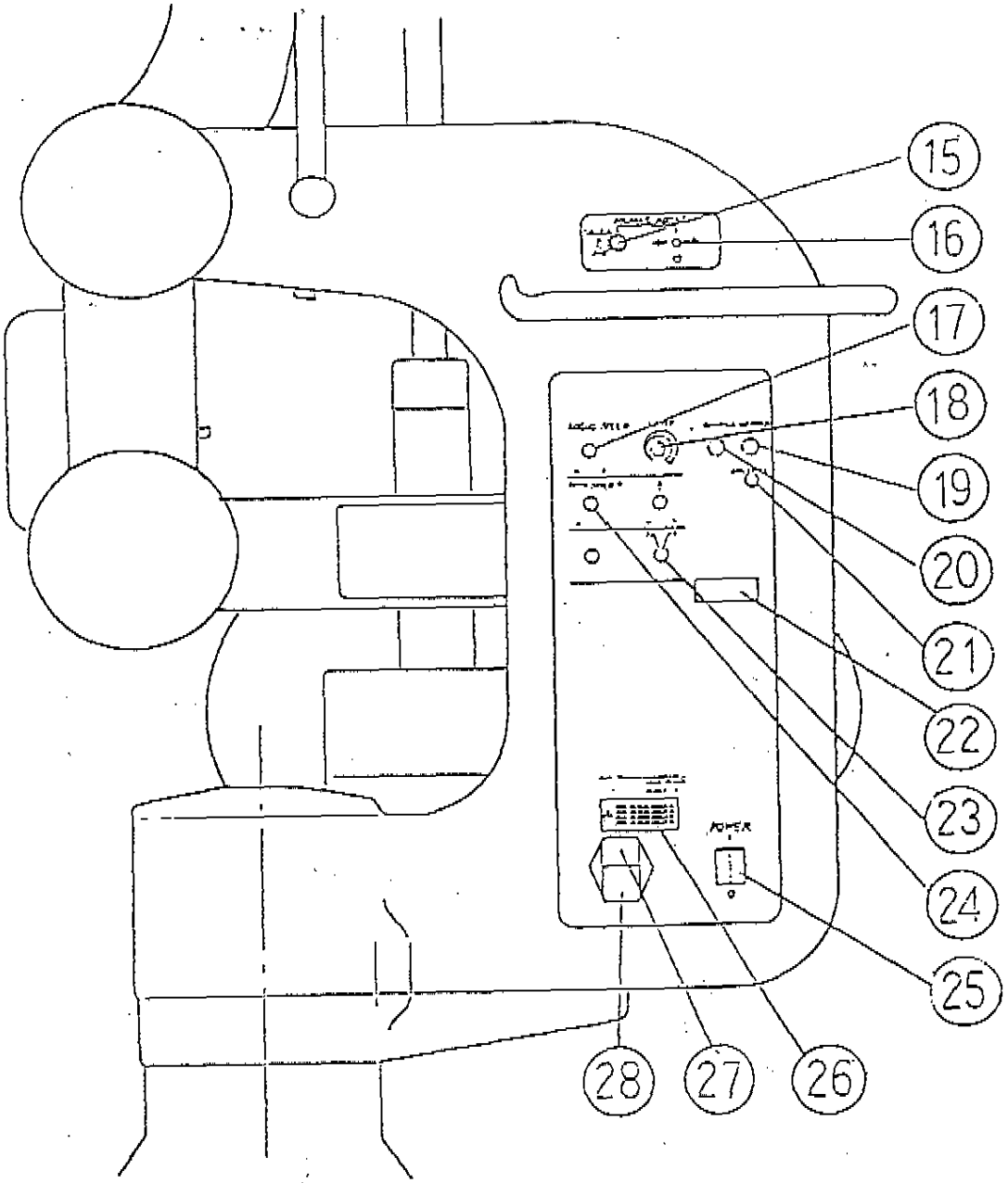
Surgeons benefit from positioning with this stand, and can change to the posterior fossa sitting position easily by pressing the All free button.

Please read this manual carefully before use to obtain maximum benefits of the instrument.



Parts name

No.	Name	No.	Name
1	Lever for base brake	8	Regulating knob for balance A
2	Clamp knob for lever	9	Regulating knob for balance B
3	Counter Weight	10	Focus switch
4	Handle for transport	11	Zoom switch
5	Semi-auto balancing system	12	Hand grip
6	Lock lever for Brake 3	13	All free button (Black)
7	Lock lever for Brake 2	14	Regulating knob for balance C

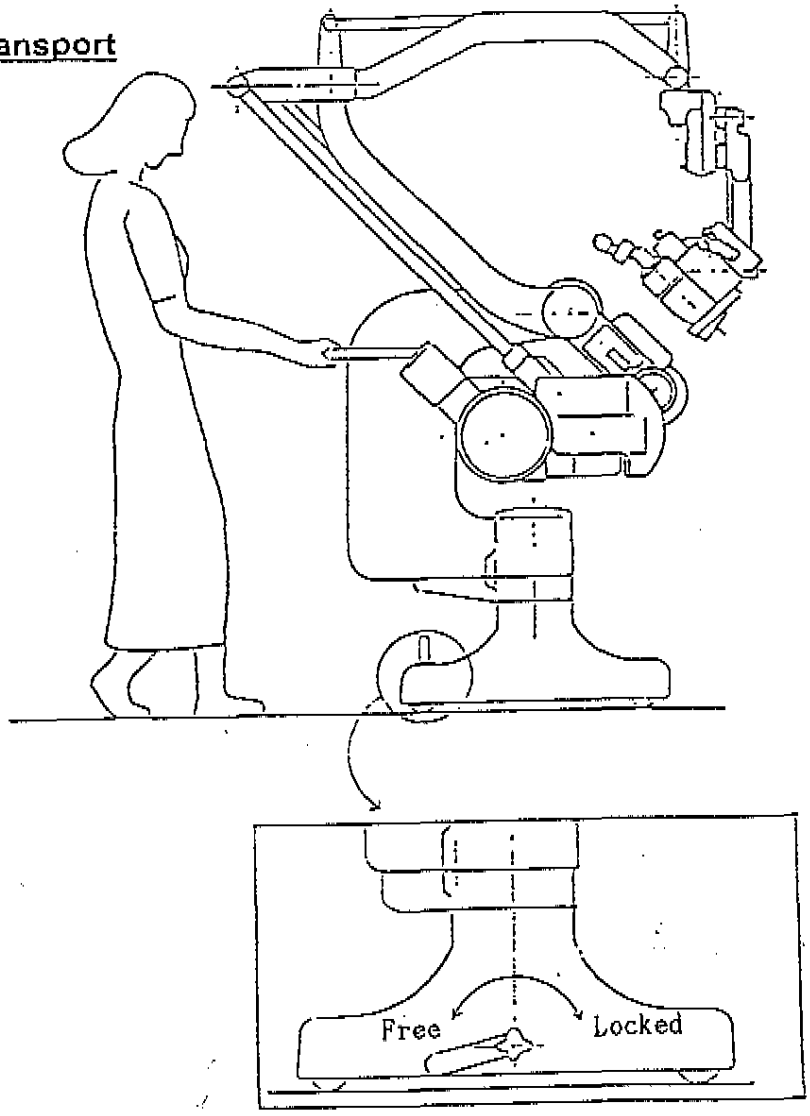


Control Panel

No.	Name	No.	Name
15	Selecting knob for balance adjust	22	Function Display
16	Switch for balance D	23	Selecting knob 1 or 2
17	Regulating knob for focus speed	24	Regulating knob for zoom speed
18	Regulating knob for illumination	25	Power switch
19	Socket for control B	26	Display for voltage selection
20	Socket for control A	27	Voltage selector and fuse holder
21	Socket for additional function	28	Socket for power cable

A) PREPARATION BEFORE THE OPERATION

1. Transport



How to transport

Set the lock lever for Brake 2 and Brake 3 to the free position.

1. Fold the arm as shown above fig. 1.
   Loosen the clamp knob for lever.

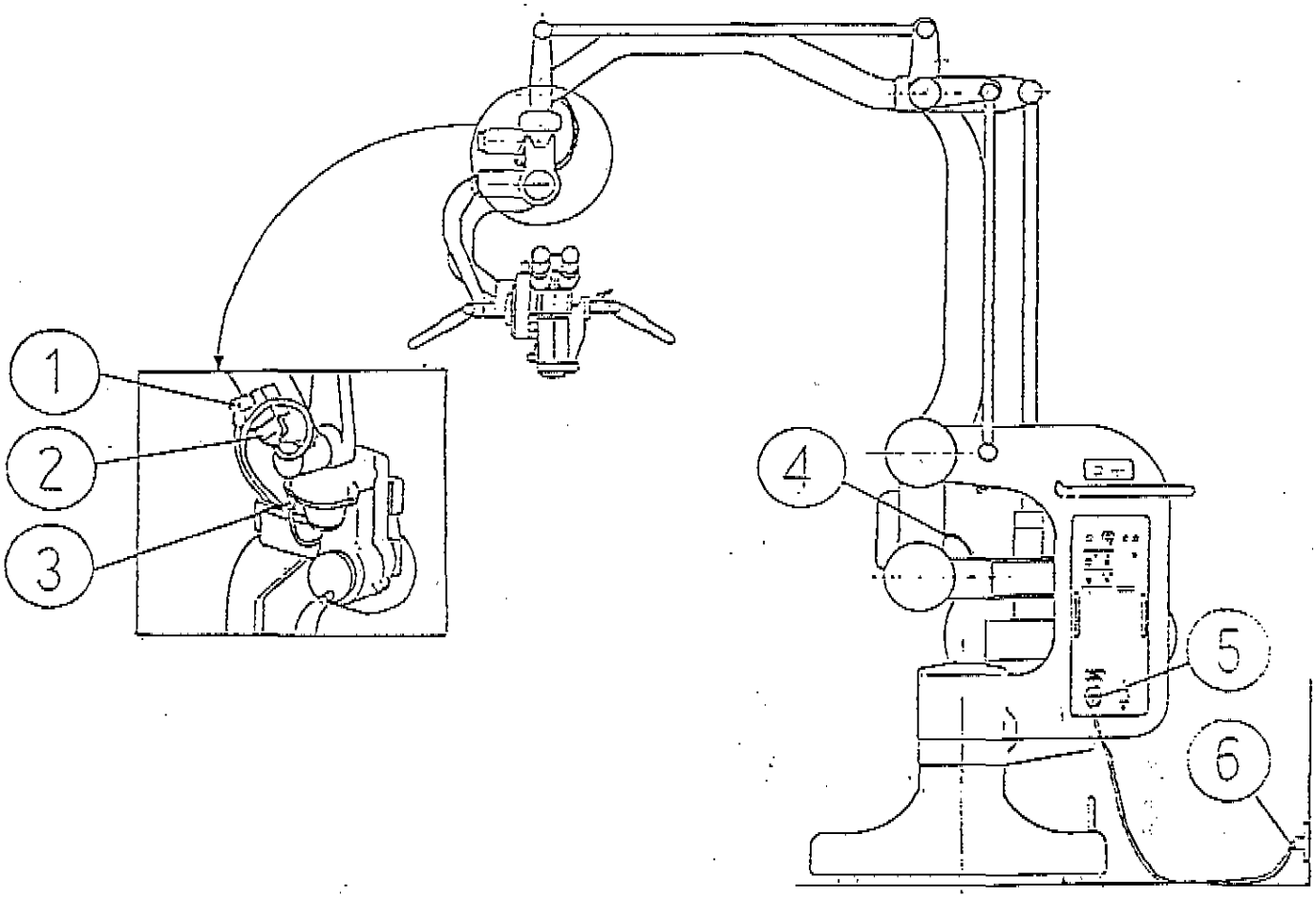
2. Rotate the lever for base brake anti-clockwise.
   The microscope stand will be free to transport.

3. Use the handle on the column to transport the stand to its working location.

   (CAUTION!)
   Do not handle the arm or the microscope carrier and be careful lest the microscope be accidentely hit.

4. For safety, rotate the brake lever clockwise and lock it after transportation.

2. Check power supply and fuses



1) Check cables

① Check that the cables ① ~ ⑤ are properly connected and are not damaged.
② Connect the power cable ⑥ to AC outlet.

(CAUTION!)

- Never disconnect cables ① ~ ④ except in the case of accident.
- Use only designated cables ① ~ ⑤.

2) The regulation of power supply on the control panel is as follows.

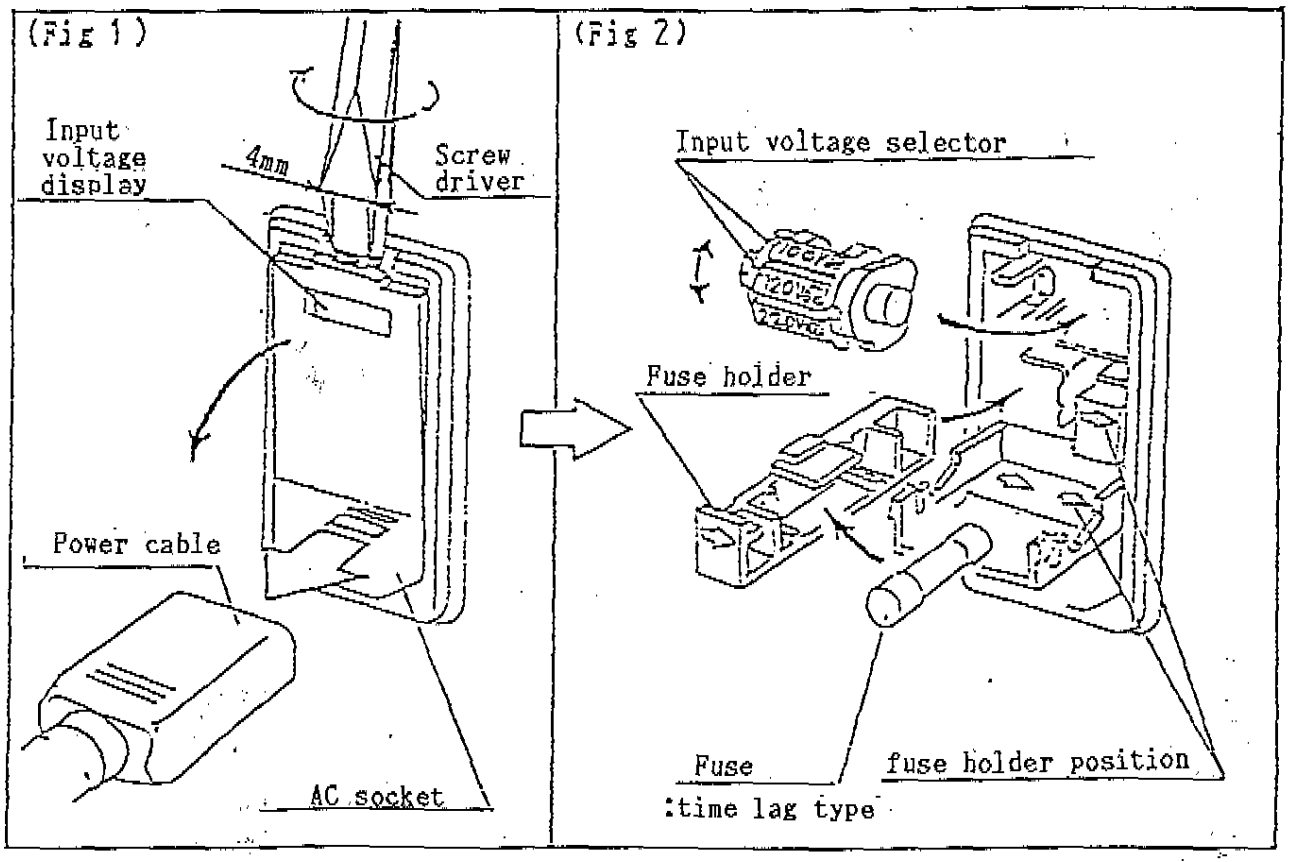
Voltage : AC 100V
120V (+15~-10%)
220V
240V

Power : 310VA

Frequency : 50/60Hz

Protecting type for electric shock
: class I

Protecting type for electric shock
: level B



The power supply needs to be set to the correct input voltage in accordance with the country.
Check the input voltage display that it is set properly. If it is not so, select the nearest voltage from 100V, 120V, 220V and 240V.
(For example, the voltage in USA is 115V, then select 120V.)

(Example) In case of change from 120V to 240V.

① Remove the power cable out from AC socket. (Fig. 1)

② Open the cover with a screw driver. (width 4mm) (Fig. 1)

③ Pull the selector out, then set it where "240V ac" is visible in the window. (Fig. 2)

④ Close the cover correctly.

3) Check fuses

There are 2 fuses in AC socket. (Fig. 2)
The regulation of fuses on the control panel is as follows.

①	②		③	④	⑤	⑥	⑦
	100V	:	2x	T	5.0A	250Vac	
	120V	:	2x	T	5.0A	250Vac	
	220V	:	2x	T	3.0A	250Vac	
	240V	:	2x	T	3.0A	250Vac	

① Sign for "See users manual"
② Voltage selector: Different in each country.
Select the nearest voltage from 4 values.
③ Number of fuses needed: 2x → Two pieces
④ Type: T → Time lag type
(CAUTION!) Not available except time lag type.
⑤ The regulation of current: 5.0A for 100V, 120V
3.0A for 220V, 240V
⑥ The regulation of voltage: 250Vac
⑦ Sign of fuse

(When fuse has failed)

Change fuse in accordance with Fig.1, Fig. 2, P. 7.

① Remove the power cable from AC socket. (Fig. 1)
② Open the cover with a screw driver. (width 4mm) (Fig. 1)
③ Remove the fuse holder, then change the failed fuse to the correct one. Set the fuse holder correctly in accordance with an arrow mark.
④ Close the cover correctly.

(CAUTION!)
If new fuse fails again, remove the power cable from AC outlet, then contact the service agency.
(spare fuses)
Keep 2 spare fuses at least near the stand for immediate use.

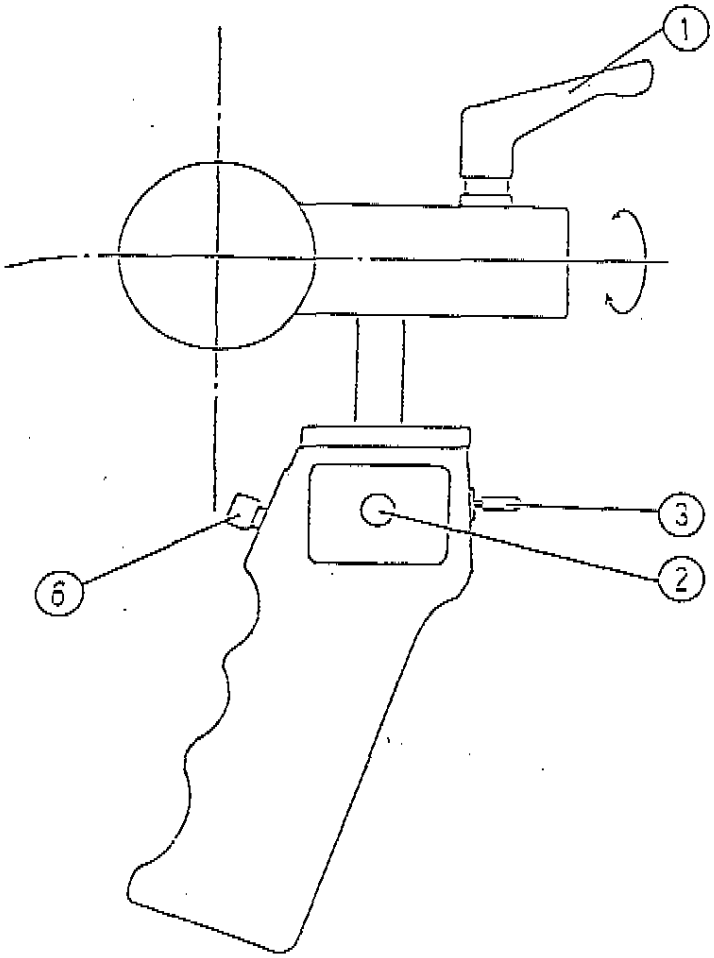
3. Power on

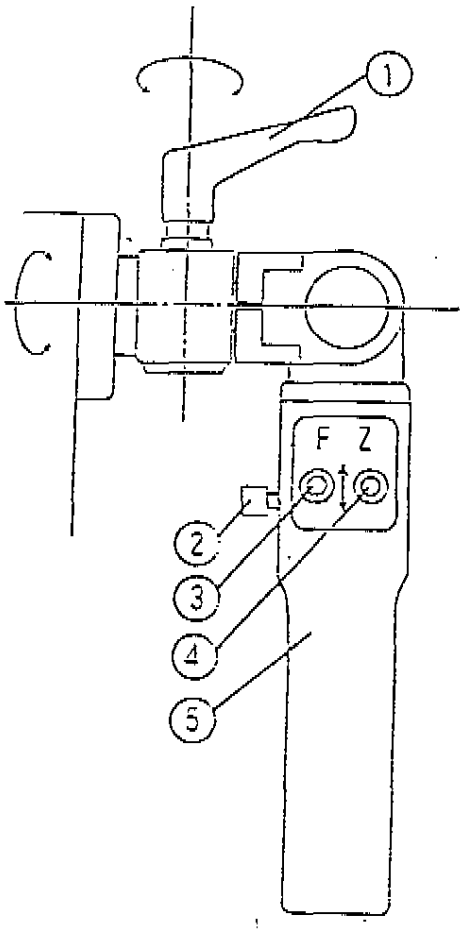
1) Check the power switch is OFF, then put the plug into AC outlet.

2) Turn the power switch ON.

(CAUTION!)
- Keep voltage, power and frequency showed on the control panel.
- Put the plug into AC outlet with a ground terminal.
- Grip the plug properly when putting in and putting out.

3) Check that the green light is on when the power switch is turned on.





No.	Name
1	Lever for fixing hand grip
2	Key for XYZ free
3	Focus switch
4	Zoom switch
5	Hand grip
6	Key for All free

4. Hand grips

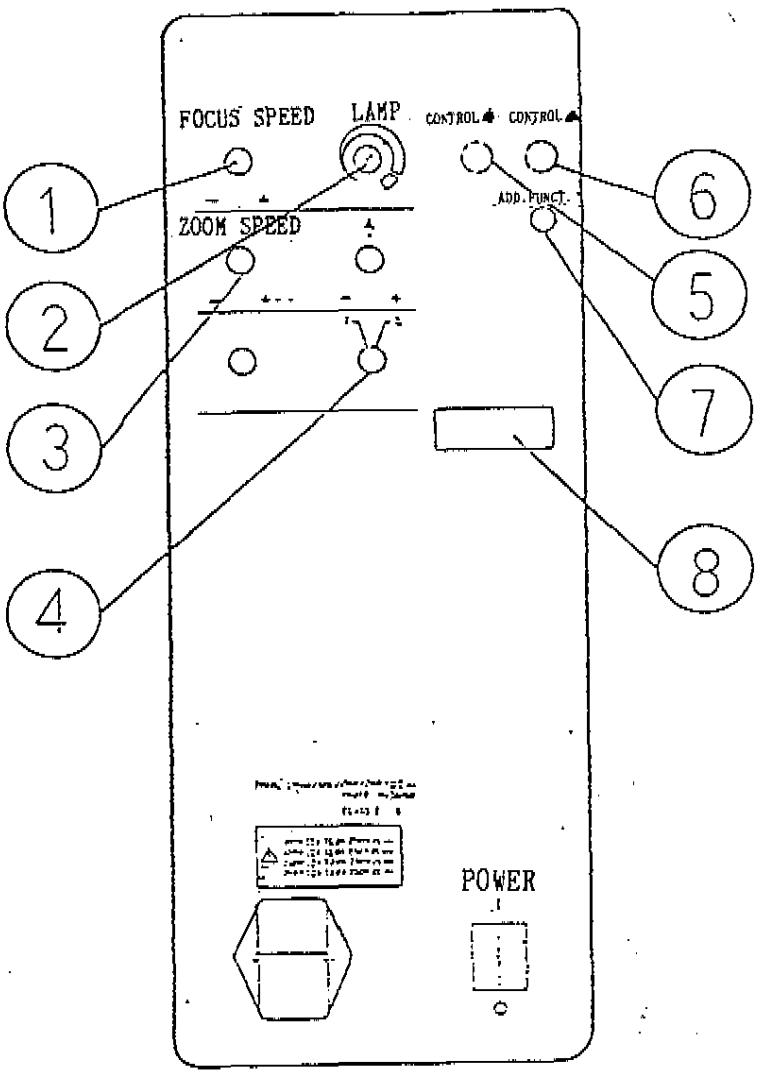
1) Set hand grips
The hand grips can be set at any convienient position.
Set the hand grips in accordance with the estimation of microscope's inclination during the operation.

(How to set the hand grips)

① Turn the power switch off to avoid misoperation.

② Turn the lever ① anti-clockwise, the hand grip ⑤ will be free.
Select favored position, then turn the lever ① clockwise, the hand grip will be fixed.

(CAUTION!)
To avoid the hand grips lossening, tighten the lever ① firmly.



No.	Name
1	Regulating knob for focus speed
2	Regulating knob for illumination
3	Regulaitng knob for zoom speed
4	Selecting knob 1 or 2
5	Socket for control ● (RED)
6	Socket for control ▲ (BLUE)
7	Socket for additional function
8	Function display

5. Check Illumination, Focus and Zoom

1) Function of control panel

① Regulating knob for focus speed
The focus speed can be adjusted with this knob.

② Regulating knob for illumination
The microscope illumination can be adjusted with this knob.

③ Regulating knob for zoom speed
The zoom speed can be adjusted with this knob.

④ Selecting knob 1 or 2
If you select position "1", socket A is available, and select position "2", socket B is available.

⑤ Socket for control A

⑥ Socket for control B

⑦ Socket for additional function
Socket for connection of additional function, for example, foot switch for shutter of 35 mm camera.

⑧ Function display
Display for the function inspection. (Service check)

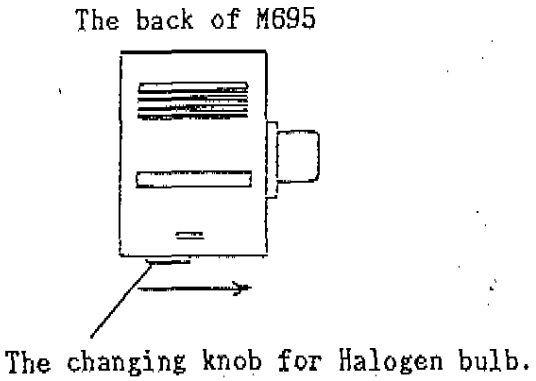
2) Check the funtions

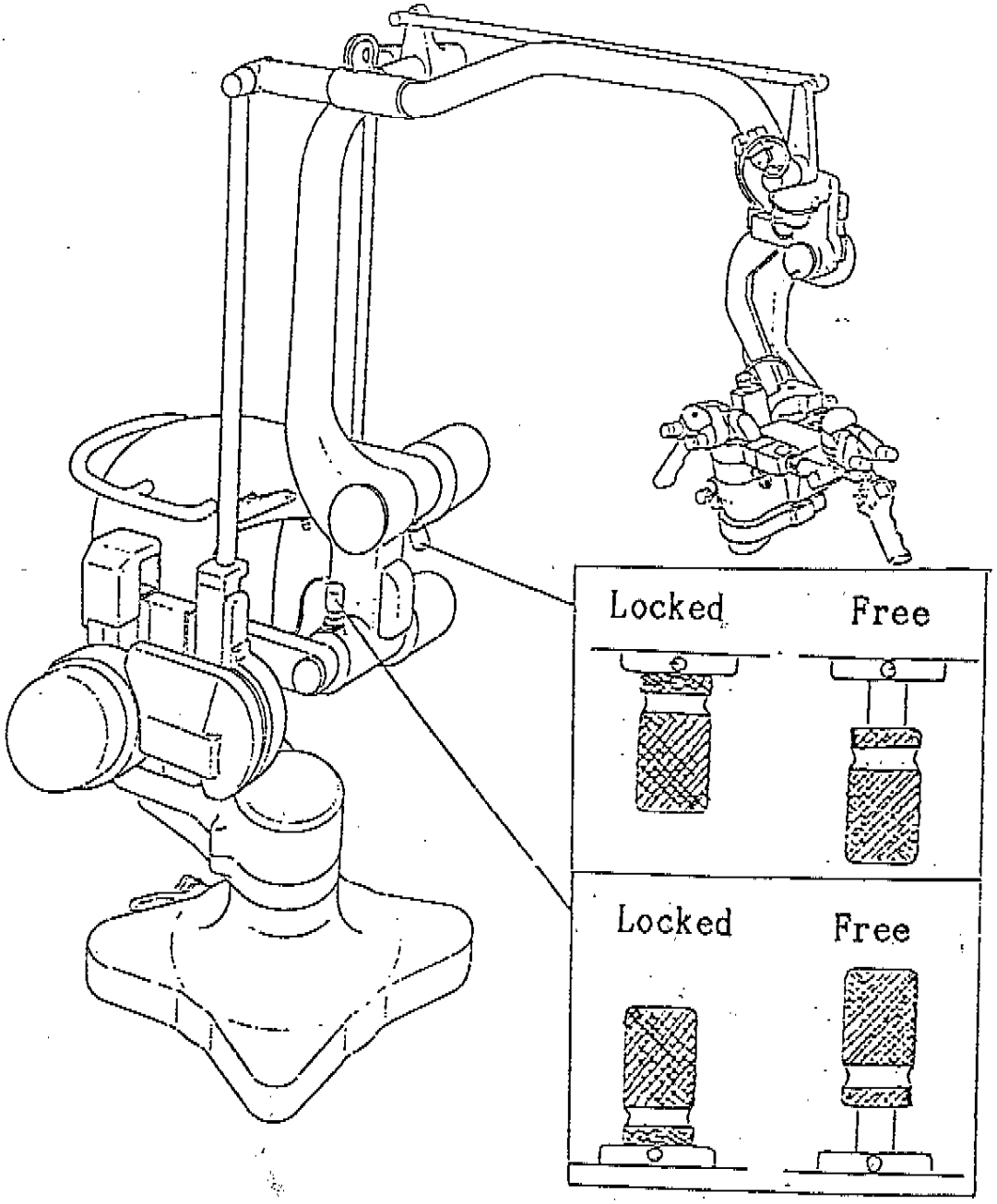
① Confirm the illumination is off, turn on the main switch.
② Turn the regulating knob for illumination clockwise to the desired brightness.

When the halogen bulb fails during the operation, you can change to the spare bulb immediately.
Check each bulb is working.

(CAUTION!)
- The bulb may fail, if you move the changing knob too fast.
- Change the failed bulb to a new one as soon as possible.

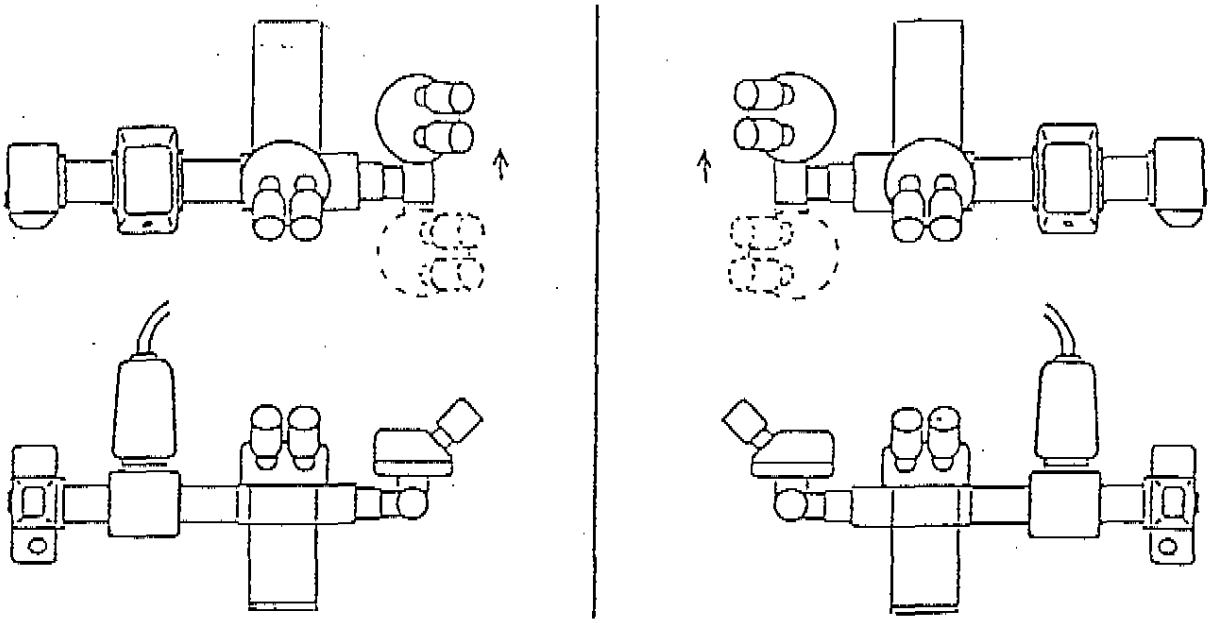
③ Check focus switch and zoom switch.
④ Set the regulating knob for zoom speed and focus speed to your desired setting.





6. Select the microscope parts

Select the microscope parts being used in the operation.
Lock the lever for Brake 2 and Brake 3 when you set or change the parts of the microscope. (For example, change the position of the assistant's microscope and TV camera, add the dual stereoscope.)



7. Check TV, 35mm camera and its film, also the position of assistant's microscope

The cable from TV camera is attached along the arm.

1) Connect the cables of the TV and 35mm cameras.
   (Problems may occur if you connect the cables with the power on.)

2) Check the cables do not disturb the motion of the arms.

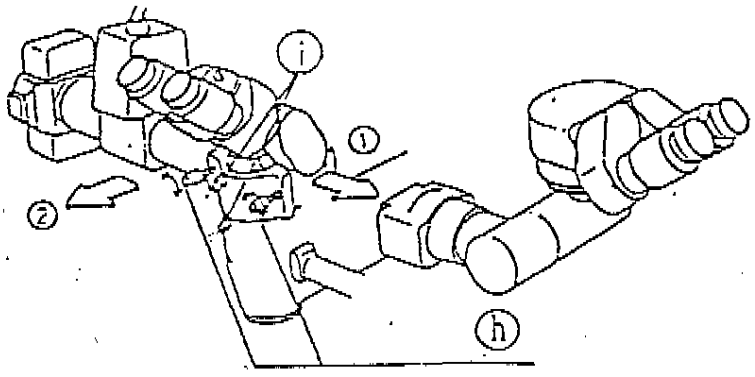
3) Check film and the batteries for 35mm camera are available.

4) The position of assistant scope
   The standard position of the microscope is that assistant scope is rightside and TV and 35mm camera are leftside.

When you want to change the position, please proceed as follows.

(CAUTION!)
Lock the lever for Brake 2 and Brake 3, when you change positions.

① Turn the power switch off.
② Detach the assistant scope.
   Hold the assistant scope with one hand and loosen the knob (h) on both sides
   Detach the assistant scope and store it safely.
   Keep the knob (i) tightened.



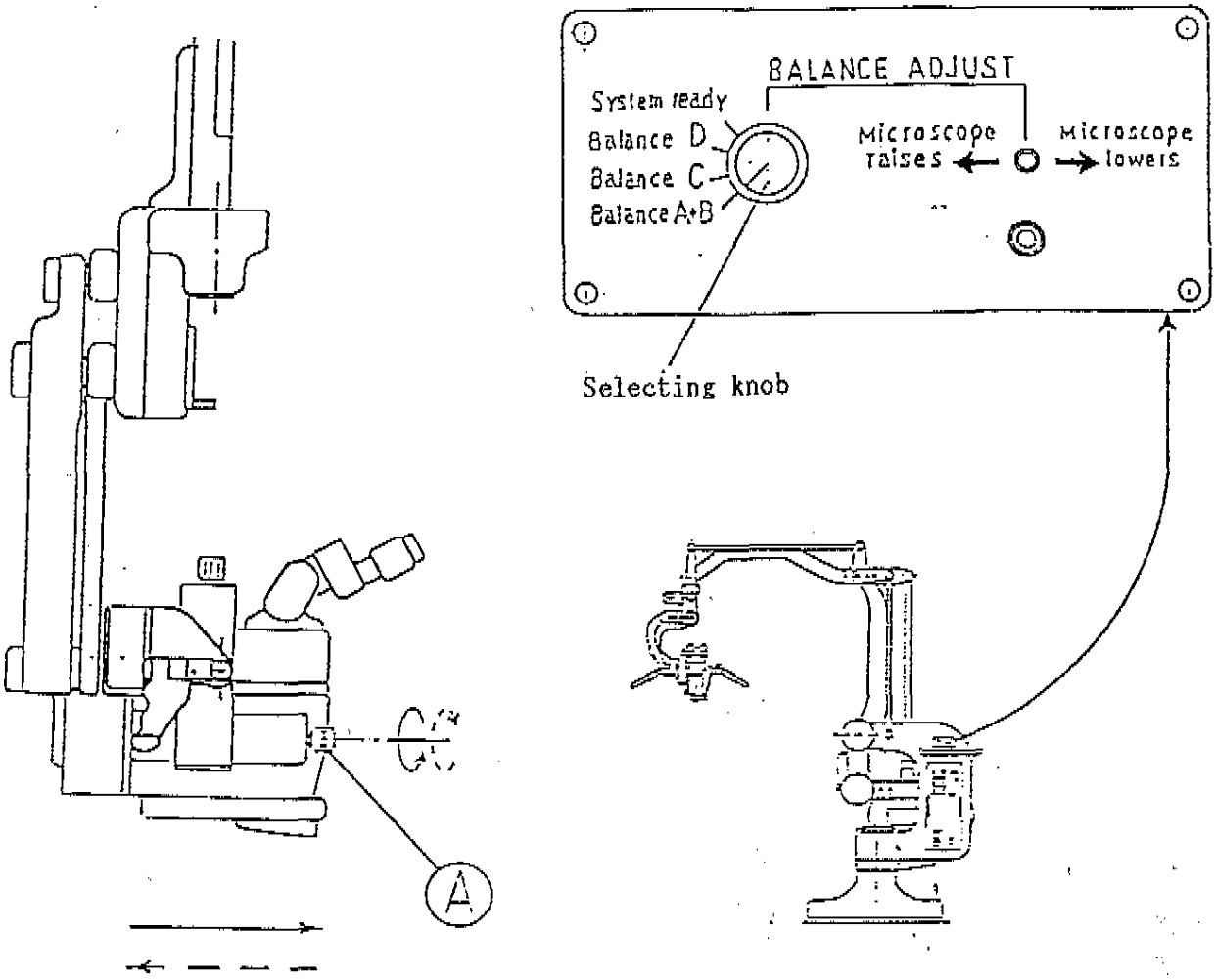
③ Hold TV and 35mm cameras with one hand, and detach them in the same way. (p. 18)
Then attach them to the other side correctly and tighten the knob (h).

④ Reattach the assistants's microscope in the same way. (p. 19)

⑤ If you use a TV camera, check the direction of display is the same as that of microscope. If they are not, adjust by rotating the TV camera.

(CAUTION!)
After the adjustment, tighten the clamp properly.

⑥ Check the vision of 35mm camera is the same as the TV display through the viewfinder. If it is not, adjust by rotating 35mm camera.
After the adjustment, close the viewfinder.



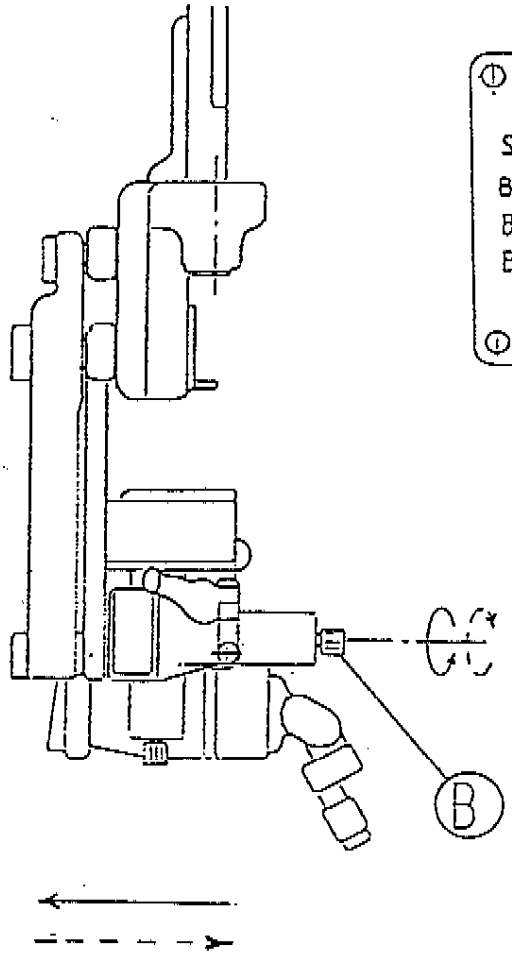
8. Balance Adjustment

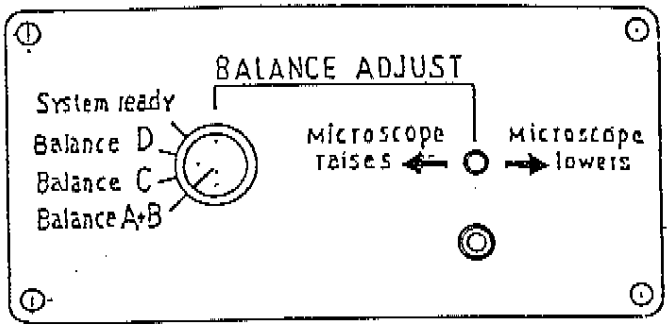
Adjust the balance of the microscope after selecting the specification to be used in the operation.
Turn the power switch on.

1) Balance A + B

Set the selection knob to Balance A + B

① Balance A
When the black button on the hand grip is pressed and the front side of the microscope is heavier, turn the knob A clockwise (dotted line), if the back is heavier, turn the knob A anti-clockwise (solid line).
If the microscope stops at any set angle, it is well balanced.





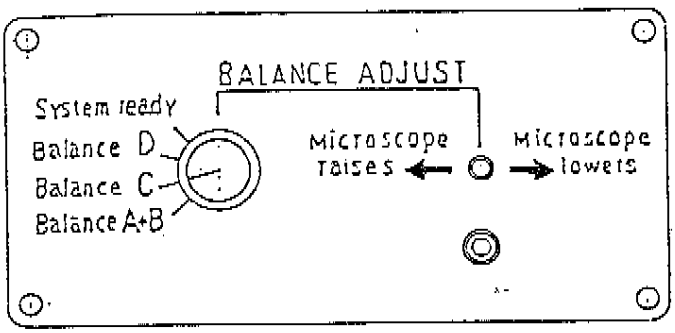
② Balance B

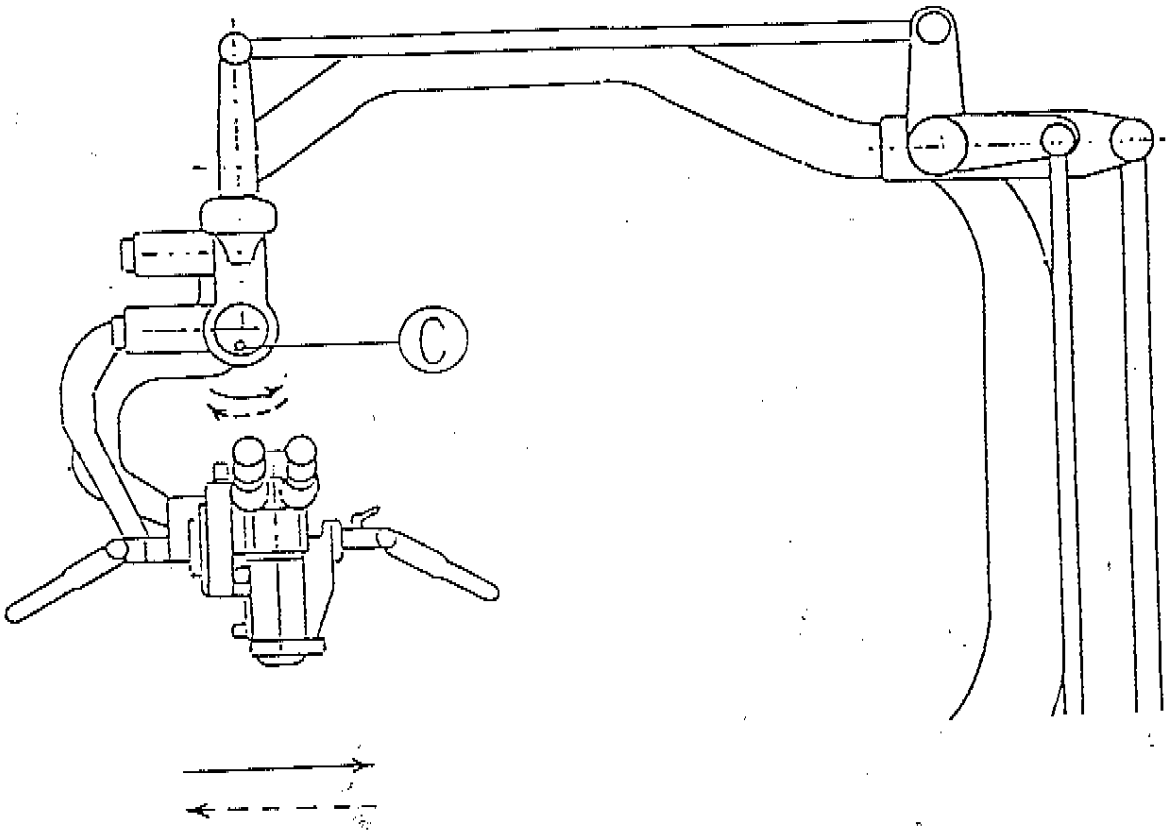
Tilt the microscope 90° as the picture shows, then press the black button on the hand grip!

If the top of the microscope is heavier, turn the knob B anti-clockwise (solid line), if the bottom is heavier, turn the knob B clockwise (dotted line).

When the microscope stops at any angle, it is well balanced.

Repeat the balancing A and balancing B until both are well balanced.





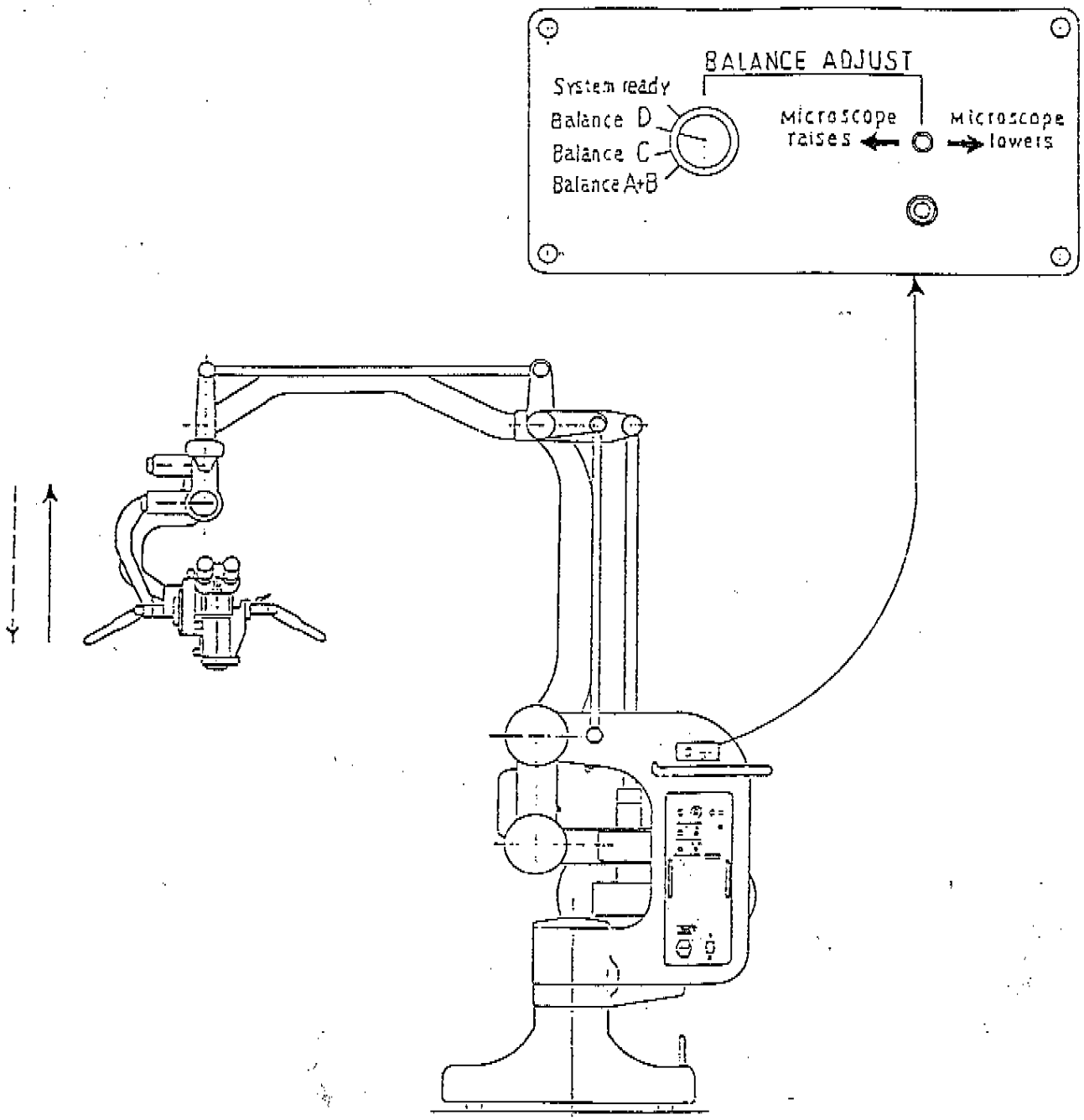
③ Balance C

Set the selecting knob to Balance C.

If the microscope is not well balanced, it tilts to the left or the right when the black button is pressed.

If the microscope tilts to the left (the left hand grip lowers), turn the knob C anti-clockwise (solid line), if it tilts to the right (the left hand grip raises), turn the knob C clockwise (dotted line).

When the microscope stops at any angle, it is well balanced.

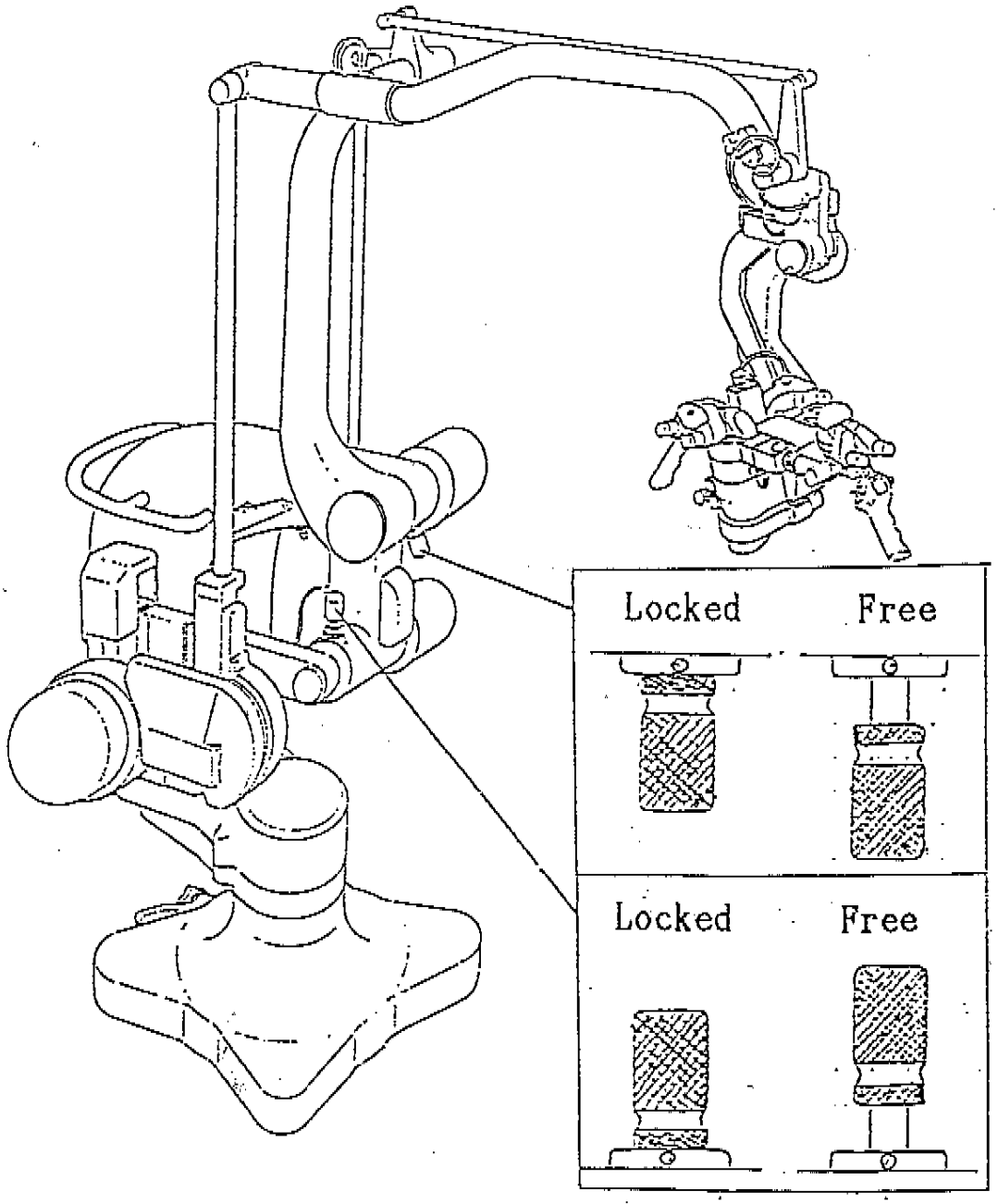


④ Balance D

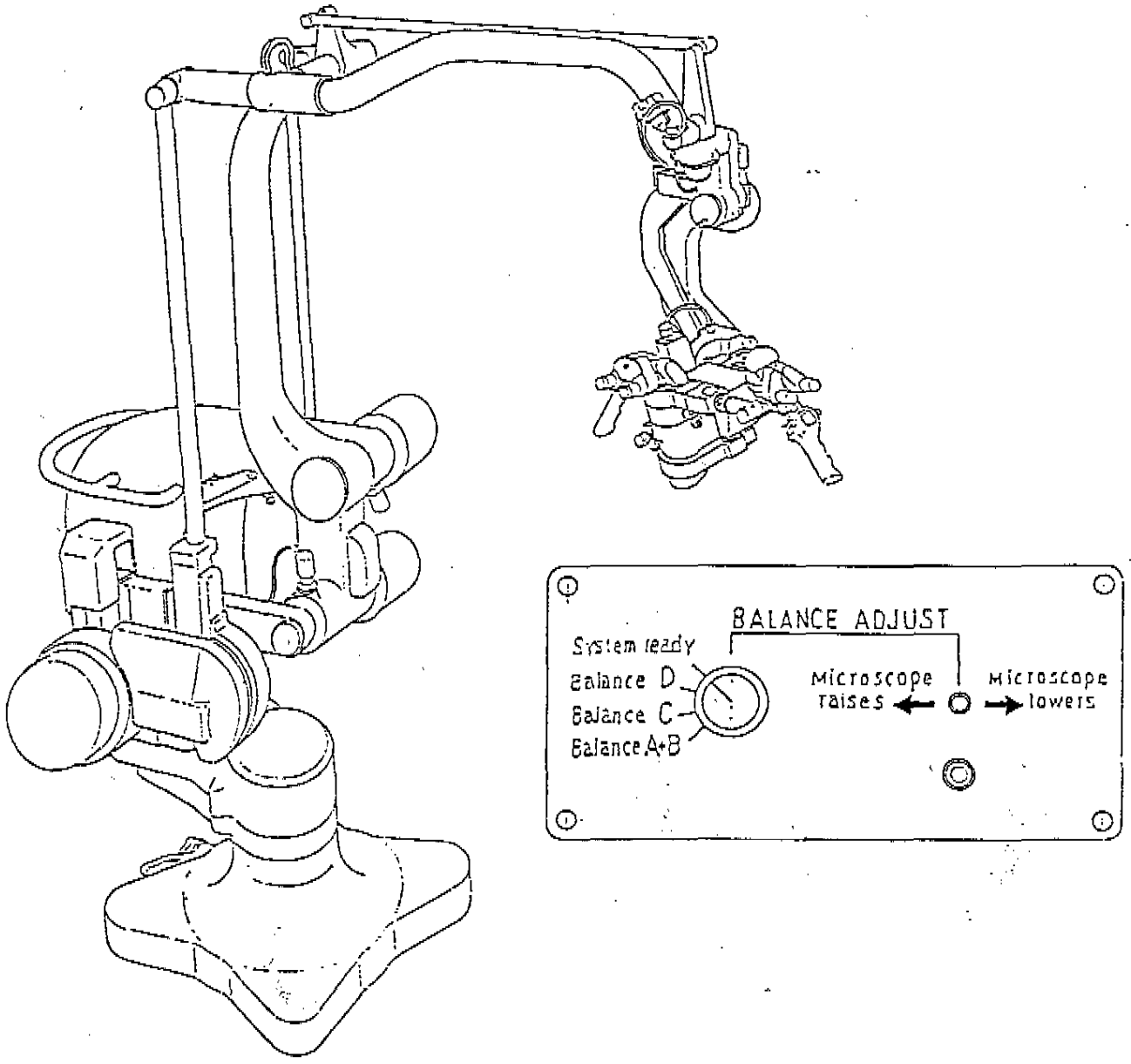
Release the lock levers for Brake 2 and Brake 3.

Set the selecting knob to Balance D.

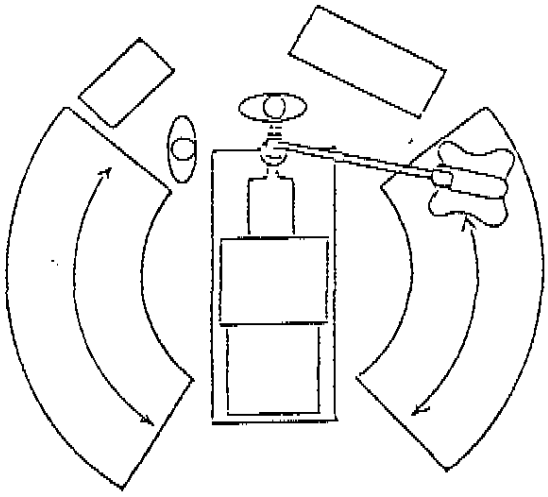
When the black button on the hand grip is pressed the microscope lowers, turn the switch to "Microscope lowers", it it raises, turn the switch to "Microscope raises".

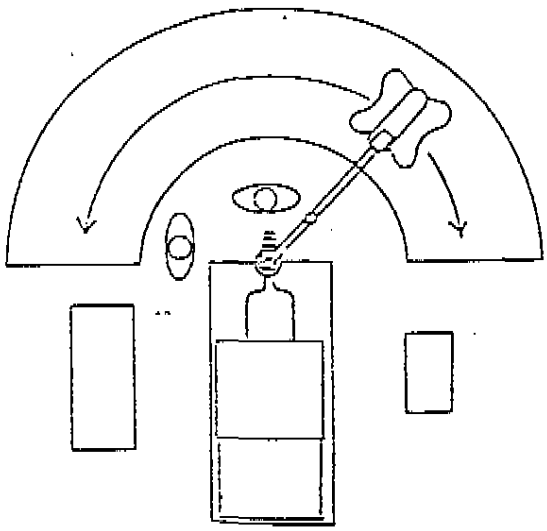


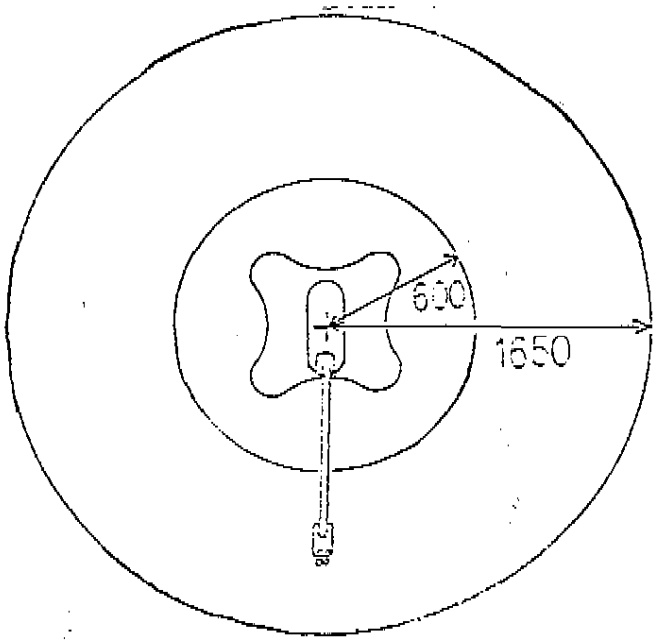
When the stand is balanced, check fine balance for all six Brakes. (Br. 1 ~ Br. 6)



⑤ Set the selecting knob to "System ready", after adjusting balance A ~ D. Check the motion of microscope in all directions and angles.
Adjusting the balance is not always needed unless accessories for the microscope (ex. TV or 35mm camera, 180° dual stereoscope) are changed.







9. Positioning

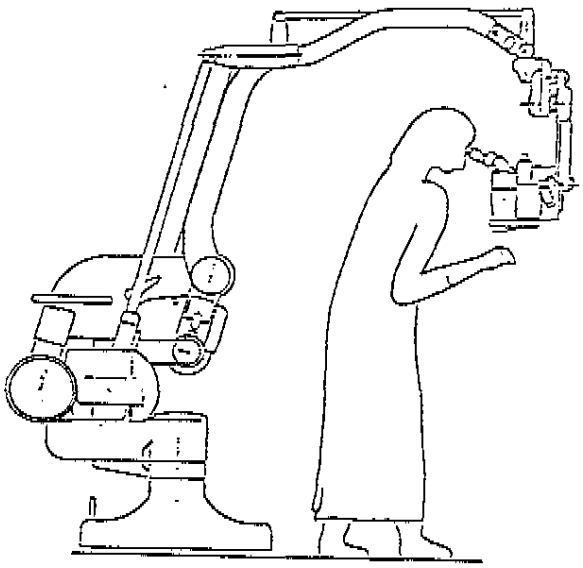
The stand can be set to any position in the operating theater within the range of reach, but not obstructing other instruments.
The microscope can be used in any direction arround the base and can be moved when it is not needed during the operation without having to move the base.

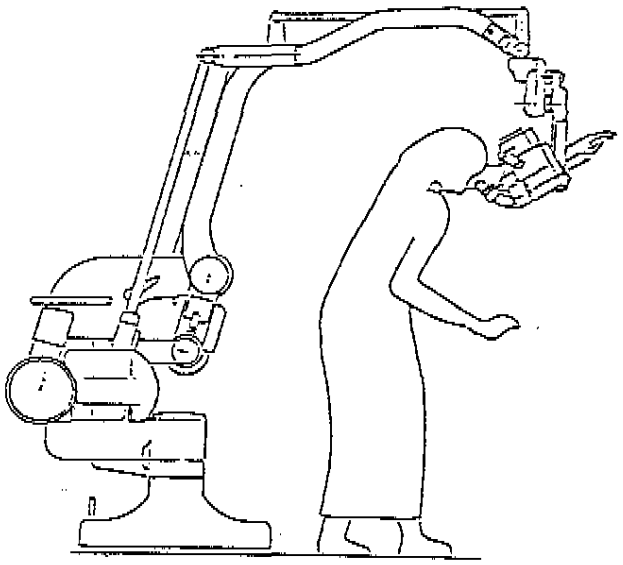
(Setting)

1) Place the operating lights so that they do not obstructing the position of the microscope.
2) Release the brake lever of the base.
3) Turn the knob for illumination on.
4) Determine the best position for the stand, move the instrument to this position.

* See the figure of positioning OH Stand and other instrument for operation.

5) Lock the brake lever for the base.





The OH Stand has a long and curved arm, so it enables the "Over head position" to be easily used. (Fig. 1)

The microscope can be easily used for posterior-fossa sitting position surgery. (Fig. 2)

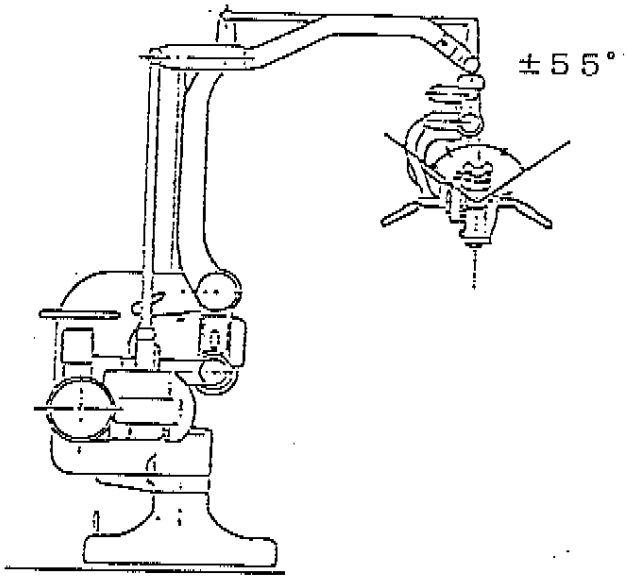


Fig. 1 Tilt angle to the right and left

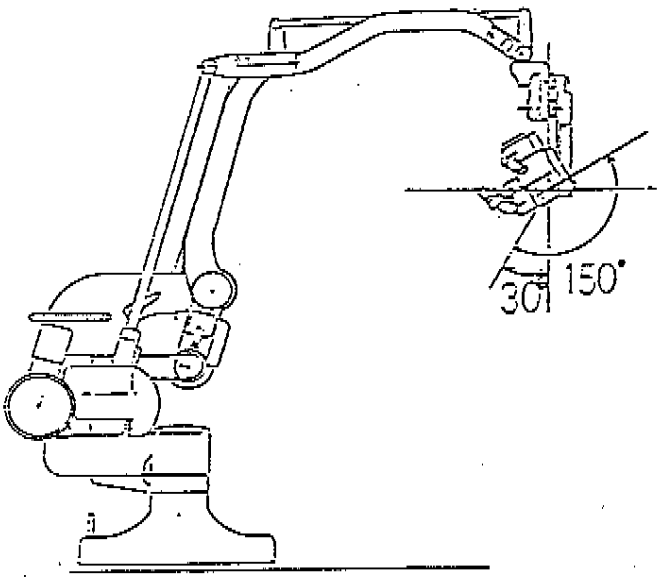
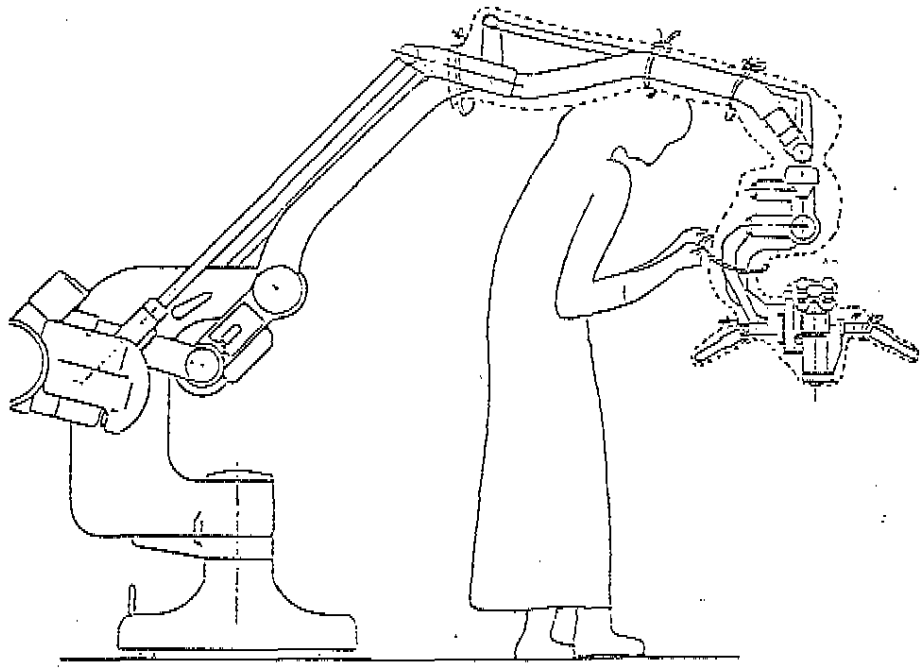


Fig. 2 Tilt angle to the back and forth

The microscope can be tilted to the right and left 55° (Fig. 1), and to the back and forth position 150° (Fig. 2).



10. <u>Cover the OH stand with microdrape</u>

Drape the OH stand with a sterilized drape.

(How to cover)

1. Allow enough space around the instrument to drape the microscope without the risk of contamination.
2. The scrub nurse covers the stand with the microdrape.
3. Bind the microdrape with attached straps at several points.

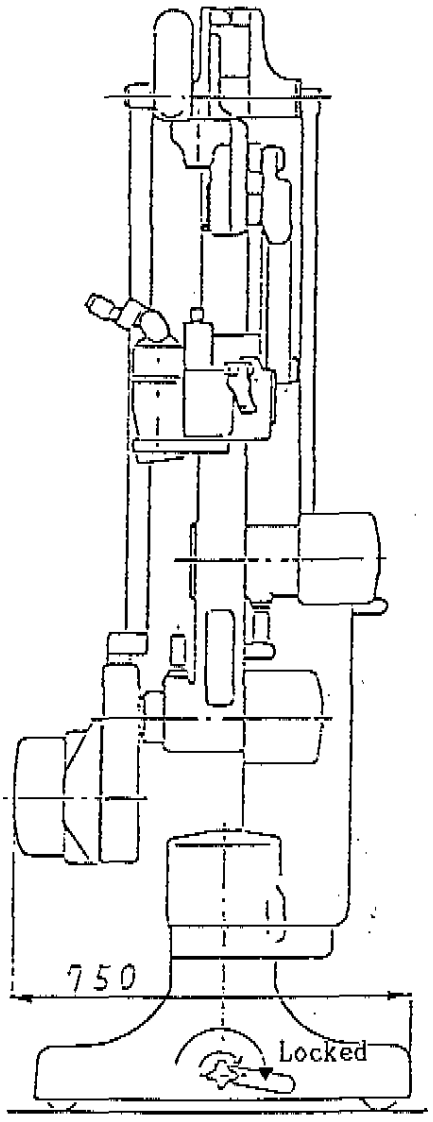
(CAUTION!)

Do not bind the microdrape to tightly so as to allow the microscope to be moved easily.

- Check the motion of the arms, before using the microscope.

4. Cover the stand with the sterilized cloths if necessary.

(CAUTION!)
Do not cover the base, power supply or pilar of the stand.



11. Fix the base of stand

① Place the operating lights and other instruments for the operation in position.

② Place the stand in the perdetermined position.

③ Turn the lever for base brake and lock the clamp knob for lever tightly.

B) DURING THE OPERATION

12. Regulation of illumination, iris and 35mm camera

1) Regulate the illumination

The illumination can be regulated with the knob on the control panel.

It can also be regulated with the built-in iris of the beam splitter.

(CAUTION!)

Keep the iris of the beam splitter open except in special cases because it has an influence on the TV and 35mm cameras.

2) Caution when taking photographs

①Regulate the illumination to 12V. (End of black indicator)

②Open the iris in the beam splitter.

(When the bulb fails)

The knob for changing the bulb is on the underside of the lamphouse.

Change the spare bulb by sliding the knob. (See p. 16)

Do not forget to change the failed bulb after the operation.

13. Hand switch

1) XYZ free

Press the white button, three brakes (Br. 1 ~ Br. 3) are released and the microscope can be moved freely in XYZ axis.

The microscope can be moved weightlessly at any position because it is well balanced.

This function is used as follows.

① Guide the target in the field of microscope's vision.

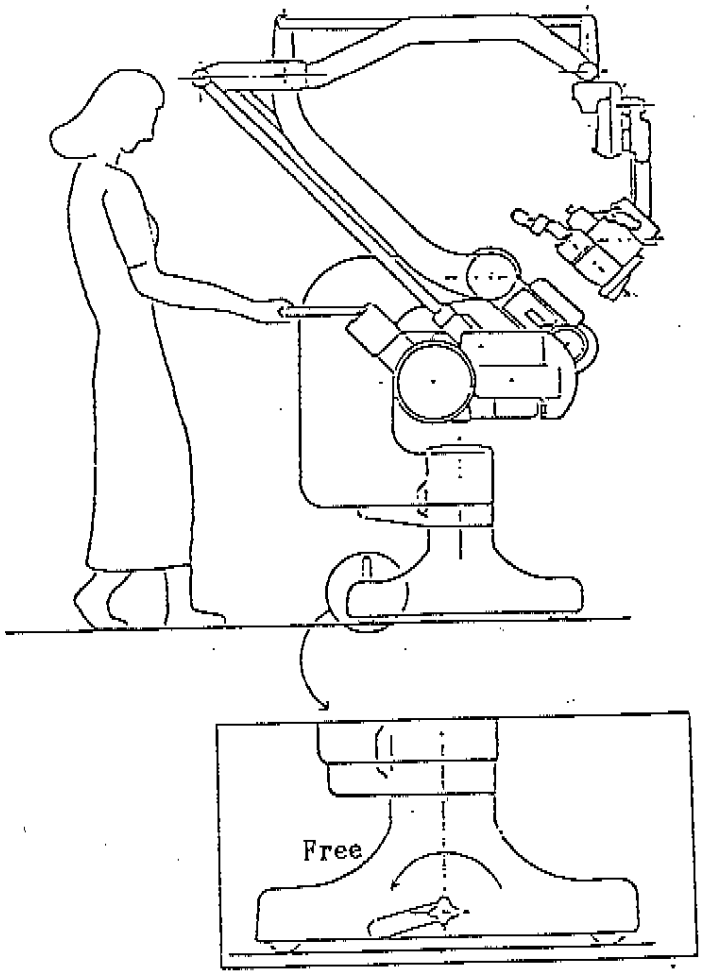
② Adjust the focus roughly.

③ Move the microscope to any favorite position.

2) All free

Press the black button, the microscope will be All free. All six brakes (Br. 1 ~ Br. 6) are released.

The microscope can be operated smoothly to any position.



C) AFTER THE OPERATION

14. Remove the OH stand

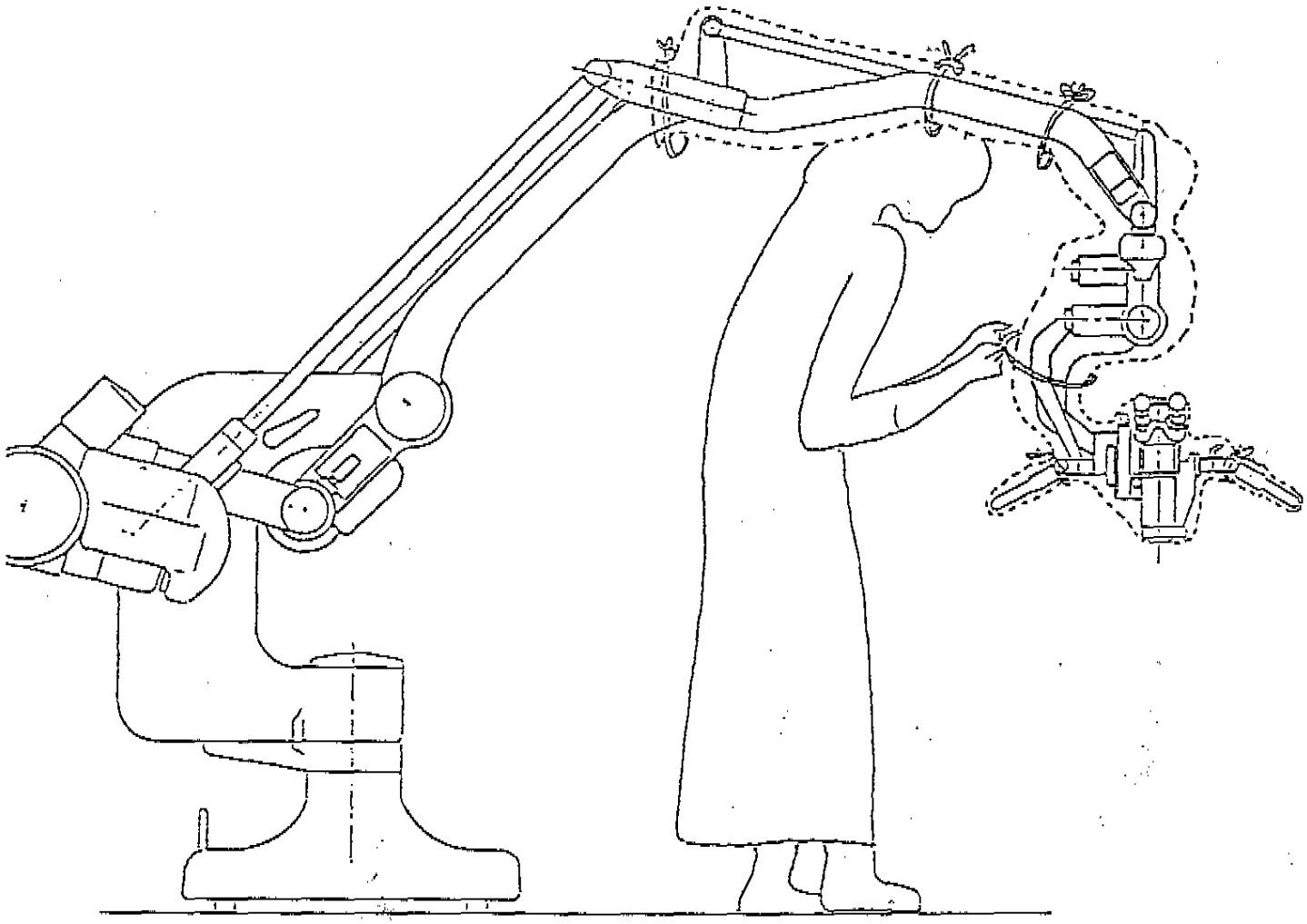
Remove the stand from the operating field do not obstruct anyone in the operating theater.

1) Release the lever for base brake before removing the stand.

2) Check that obstacles and the power cables of other instruments are not in the way.

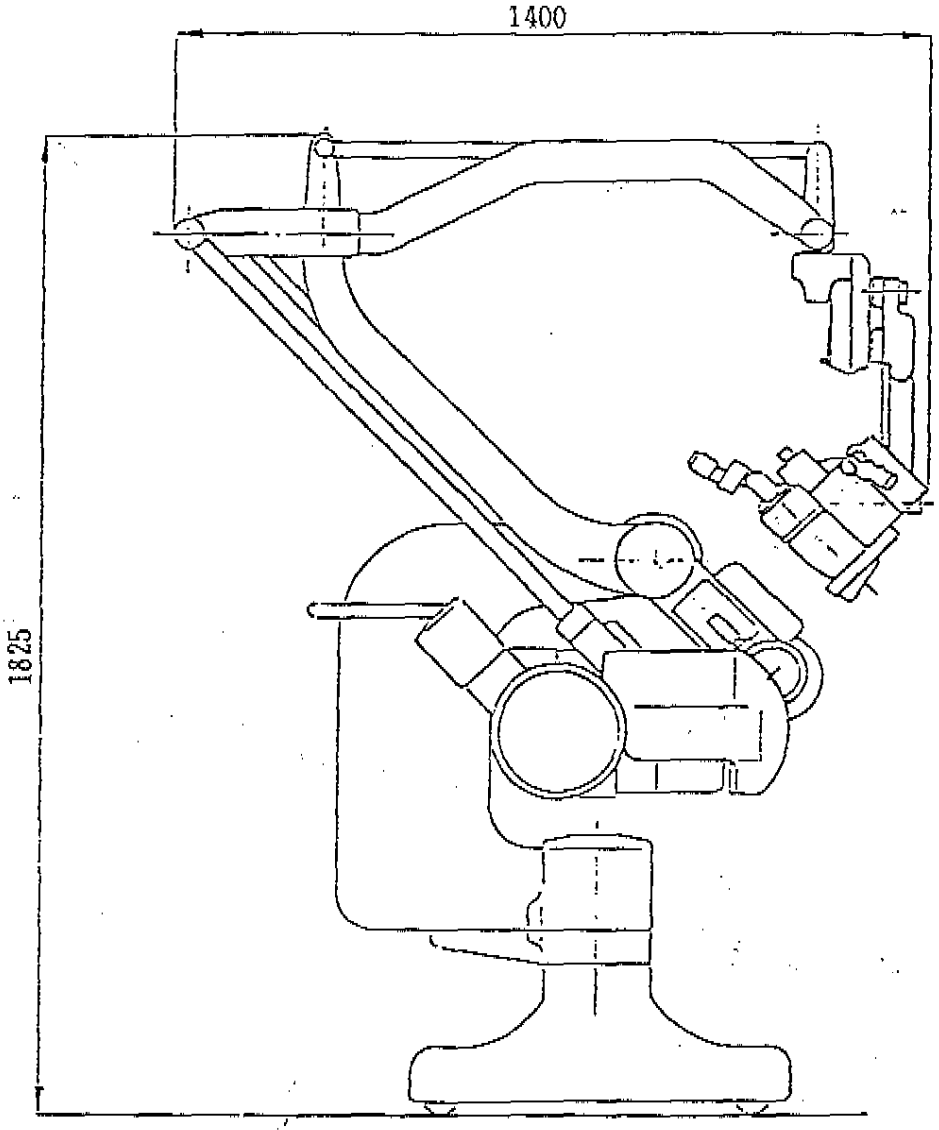
3) Grip and push the handle for transport of the stand.

(CAUTION!)
Release the lock lever for Brake 2 and Brake 3.



15. Removing the microdrape

Set the arms of the stand as shown above and remove the microdrape.



16. Power off

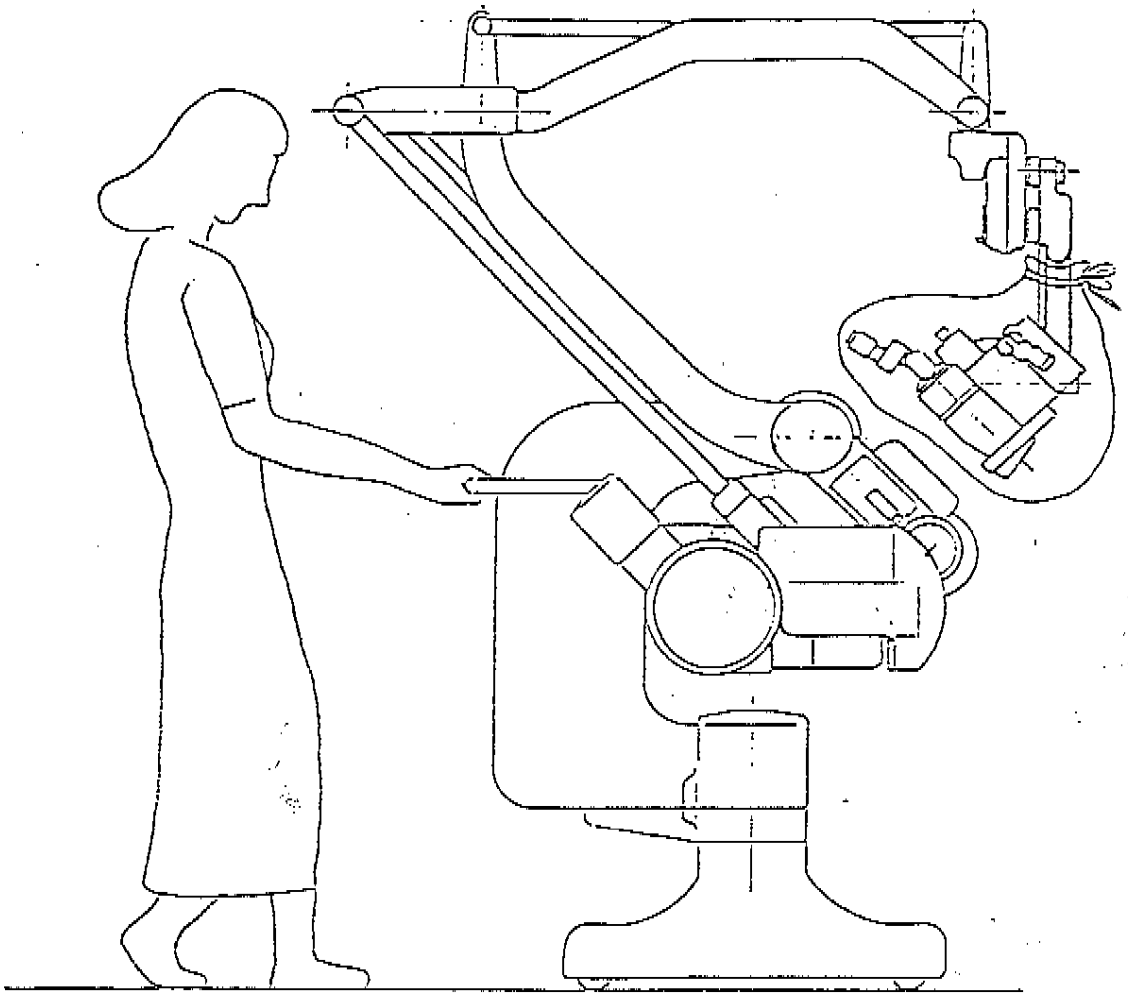
1) Turn off the power of TV camera, 35mm camera.
   Detach the connector of TV cable and fold.

2) Press the All free button and set the arms as shown above.
   Turn the power switch off.

3) Remove the plug of the power cable and store it on the stand..

17. Place the Dust cover on the microscope.

18. Transport the stand to the storage room. (position)



9. Cleaning, inspection, maintenance

- Clean the stand with a cloth dipped in neutral detergent.
- Do not use organic solvent or gas, which may cause damage to the paint.
- Do not use lubricating oil or grease on the paint.
- Check the functions once per month even if it has not been used.

NOTICE:

1) If this stand does not operate correctly, check again according to this manual.

2) If it still does not operate correctly, contact your local representative.